

PEARSON, J.

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF OHIO  
EASTERN DIVISION

IN RE: EAST PALESTINE TRAIN ) CASE NO. 4:23CV0242  
DERAILMENT )  
 ) JUDGE BENITA Y. PEARSON  
 )  
 ) **ORDER**  
 ) [Resolving [ECF No. 621](#)]

Pending is Third-Party Plaintiff Norfolk Southern’s Motion to Exclude the Expert Report and Testimony of Dr. Chason Coelho. ([ECF No. 621](#)). Third-Party Defendants GATX Corporation and General American Marks Company (herein, “GATX”) filed an Opposition. ([ECF No. 673](#)). Norfolk Southern replied. ([ECF No. 700](#)). The Court has been advised, having reviewed the record, the parties’ briefs, and the applicable law. The motion is granted in part.

**I. Background**

**A.**

The following facts are largely excerpted from the Notice of Stipulation Regarding Uncontested Facts ([ECF No. 586](#)) between Norfolk Southern and GATX.

“Norfolk Southern Train 32N derailed at approximately 8:54 pm on February 3, 2023, in East Palestine, Ohio. At the time of the derailment, Train 32N was traveling east on Main Track 1 along Norfolk Southern’s Fort Wayne Line and consisted of two lead locomotives, one distributed power unit, and 149 rail cars.” See [ECF No. 586 at PageID #: 17627, ¶1](#). “38 railcars derailed, including 11 cars carrying hazardous materials. The tank car UTLX 205907 containing butyl acrylates, a flammable liquid, was breached in the derailment and, as a result, released its contents which ignited and formed a pool fire.” [ECF No. 586 at PageID #: 17632, ¶¶ 56-57](#).

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"The pool fire resulting from Train 32N was near or surrounding five [] tank cars carrying VCM [a flammable gas], including GATX 95098[,] which was designed and constructed to transport VCM." [ECF No. 586 at PageID #: 17629, 17632 ¶¶ 17, 19, 59.](#) "[A]round February 4, 2023, a Unified Command was formed[] that included []local first responders and various federal and state agencies." [ECF No. 586 at PageID #: 17633 ¶¶ 60-61.](#) Two days later, "Unified Command, with the recommendation of Norfolk Southern and without dissent" executed a "vent and burn" procedure that "involves detonating explosives at certain locations on each tank to release and burn off a railcar's hazardous contents. [ECF No. 586 at PageID #: 17632-33;](#) see also [ECF No. 621 at PageID #: 32093.](#) "GATX was not involved in the decision to perform the vent and burn." [ECF No. 586 at PageID #: 17633 ¶ 64.](#)

**B.**

Seeking to mitigate or eliminate allocation of fault from its alleged involvement in the derailment, GATX proffers Dr. Coelho, a human factor expert. *See Opp'n. Expert Report of Chason Coelho, Ph.D., CSP, CFI.* ([ECF No. 621-6](#)). Norfolk Southern argues that Dr. Coelho lacks the qualifications to offer his opinions, and that such opinions are unreliable. *See Mem. In Supp. Of Third-Party Pls. Norfolk S. Ry. Co. and Norfolk S. Co. Mot. To Exclude the Expert Report and Test. Of Dr. Chason Coelho.* ([ECF No. 621-1](#)).

**II. Legal Standard**

[Rule 702 of the Federal Rules of Evidence](#) provides the standards for admitting expert testimony:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if the proponent demonstrates to the court that it is more likely than not that:

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- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert's opinion reflects a reliable application of the principles and methods to the facts of the case.

*Id.*

[Rule 702](#) “assign[s] to the trial judge the task of ensuring that an expert’s testimony both rests on a reliable foundation and is relevant to the task at hand.” [\*Daubert v. Merrill Dow Pharm., Inc.\*, 509 U.S. 579, 597 \(1993\)](#). It also governs the admissibility of expert testimony and codifies the Supreme Court’s holdings in [\*Daubert\*](#) and [\*Kumho Tire Co. v. Carmichael\*, 526 U.S. 137 \(1999\)](#). Expert testimony is admissible only if (1) the testimony is based on sufficient facts or data, (2) the testimony comes from reliable principles and methods, and (3) the expert has reliably applied the principles and methods to the facts of the case. [\*Fed. R. Evid. 702\*](#). An expert’s opinion cannot be based on mere speculation. [\*McLean v. 988011 Ontario, Ltd.\*, 224 F.3d 797, 801 \(6th Cir. 2000\)](#). The proponent of the expert testimony has the burden of establishing by a preponderance of the evidence that the proposed testimony satisfies those standards. See [\*Fed. R. Evid. 702 advisory committee’s note \(2000\)\*](#); [\*Daubert\*, 509 U.S. at 592 n.10](#). Expert testimony is not admissible “is the exception rather than the rule.” [\*In re Scrap Metal Antitrust Litig.\*, 527 F.3d 517, 530 \(6th Cir. 2008\)](#) (quoting [\*Fed. R. Evid. 702 advisory committee’s note \(2000\)\*](#)).

Furthermore, a *Daubert* analysis includes consideration of [\*Fed. R. Evid. 403\*](#). [\*Daubert\*, 509 U.S. at 595](#). Therefore, courts in the Sixth Circuit employ a four-prong test to determine the admissibility of expert opinions: “(1) that the witness, a qualified expert, (2) was testifying to a proper subject, (3) which conformed to a generally accepted explanatory theory, and (4) the

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probative value of the testimony outweighed its prejudicial effect.” *United States v. Smithers*, 212 F.3d 306, 312 (6th Cir. 2000) (citing *United States v. Green*, 548 F.2d 1261 (6th Cir.1977)).

### III. Analysis

GATX proffers Dr. Coelho as a human factor expert. Among other accomplishments, his Curriculum Vitae extols that he has a Ph.D in Psychology and serves as a Principal Scientist in the Human Factors practice at Exponent. *See also*, Appendix A ([ECF No. 621-6](#)) at [PageID #:](#) [51670-76](#). Dr. Coelho has used human factor, safety, and risk management to assist in the aerospace, construction, and rail transport industries. [ECF No. 621-6 at PageID #: 51671](#).

GATX proffers Dr. Coelho as an expert to “address human performance in operations, maintenance, emergency, and public contexts[,]”, and urges that he “provides expert analysis and testimony in cases involving premises liability, personal injury, international arbitration, and products liability, among others.” [ECF No. 621-6 at PageID #: 51671](#).

Dr. Coelho offers five opinions. The first is in rebuttal to those offered by experts proffered by Norfolk Southern: Dr. Coates, Mr. Wolf, and Mr. McClellan; the second takes on the emergency response; the third addresses the vent and burn; the fourth and fifth both opine on Norfolk Southern’s railroad operations. [ECF No. 621 at PageID #: 32094](#).

#### I. Dr. Coehlo Opinions on the Emergency Response, Vent and Burn, Wayside Help Desk Opinion, and Railroad Operations.

Norfolk Southern argues that Dr. Coelho lacks the qualifications for his opinions concerning the emergency response, the decision to vent and burn the vinyl chloride monomer derailed railcars, Norfolk Southern’s Wayside Help Desk operations, and the railcar inspections. [ECF No. 621-1 at PageID #: 32092, 32095-099](#). GATX contends that, because Dr. Coelho’s opinions are grounded in his education and training in cognitive neuroscience and human factors, he is qualified to find that problematic reasoning and cognitive biases among Norfolk Southern

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personnel, contractors, influenced critical decision-making processes leading to the East Palestine train derailment. [ECF No. 673 at PageID #: 46707-08, 46710-46713](#). Norfolk Southern concedes that Dr. Coelho may focus his opinions “exclusively on the human factors issues that influenced decision-making related to both the derailment and the subsequent response[,]” but counters that Dr. Coelho is unqualified to opine beyond his expertise. *See Reply in Supp. Of Norfolk S. Co. and Norfolk S. Ry. Co.’s Mot. To Exclude the Expert Report and Test. Of Dr. Chason Coelho ([ECF No. 700](#)).*

### **1. Dr. Coelho’s Second Opinion—that on the Emergency Response.**

Dr. Coelho’s second opinion asserts,

Information about safety and emergency response provided in the U.S. DOT Emergency Response Guide (“ERG”), Oxy Vinyls Safety Data Sheet (“SDS”), Pamphlet 171, and the Norfolk Southern Job Safety Analysis (“JSA”) Chemical-Specific Worksheet, upon which incident response decision makers relied, was reasonable and sufficient to inform emergency responders of firefighting measures to perform when presented with a vinyl chloride tank involved in a fire. This information included metrics indicative of polymerization and the use of water to cool down the tanks. Emergency responders could have, and should have, complied with instructions to engage in water cooling.

[ECF No. 621-6 at PageID #: 51613.](#)

Norfolk Southern argues that Dr. Coehlo’s opinion concerning the substance and quality of information available to first responders, and on how responders should have complied with that information should be excluded, because he lacks particularized rail transport emergency experience, has not performed sufficient research on the topic, and has never responded to a train derailment. [ECF No. 621-1 at PageID #: 32096.](#)

GATX argues that Sixth Circuit law does not require Dr. Coelho to have particularized knowledge in emergency response, and that his opinion does not extend beyond his “specialized

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knowledge in decision making within the field of human factors, supported by his extensive training and education.” [ECF No. 673 at PageID #: 46711-12](#). Because of his knowledge and expertise, GATX argues that Dr. Coelho may offer his human-factor analysis to a range of scenarios, and that it is irrelevant whether he “touched a wayside detector or visited a train derailment site[.]”<sup>1</sup> [ECF No. 673 at PageID #: 46711-712](#).

The pertinent question is whether a particular expert can help resolve the issue in a given case. [Bridger v. Union Ry. Co., 355 F.2d 382, 388 \(6th Cir. 1966\)](#) (determining that an expert’s opinion “requires an *ad hoc* determination, predicated upon the probable value of the witness’s testimony in relation to the intricacies of the particular lawsuit.”). The Sixth Circuit has explained that “[t]he issue with regard to expert testimony is not the qualifications of a witness in the abstract, but whether those qualifications provide a foundation for a witness to answer a specific question.” [Berry v. City of Detroit, 25 F.3d 1342, 1351 \(6th Cir. 1994\)](#). “[T]he expert need not have complete knowledge about the field in question, and need not be certain. He need only be able to aid the jury in resolving a relevant issue.” [Mannino v. Int'l Mfg. Co., 650 F.2d 846, 850 \(6th Cir.1981\)](#).

“[Courts] take a liberal view of what ‘knowledge, skill, experience, training, or education’ is sufficient to satisfy the requirement.” [Bradley v. Ameristep, Inc., 800 F.3d 205, 209 \(6th Cir. 2015\)](#) (quoting [Pride v. BIC Corp., 218 F.3d 566, 577 \(6th Cir. 2000\)](#)). “Whether a proposed expert’s experience is sufficient to qualify the expert to offer an opinion on a particular

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<sup>1</sup> In support, GATX explains that Dr. Coelho is well-qualified in human factor analysis, providing that he has three degrees in psychology, served as a university lecturer in psychology, has published over twenty papers relating to human factor analysis, and he serves as a member of the Human Factors & Ergonomics Society, and a Certified Safety Professional, and Member of the Board of Evergreen Safety Council. [ECF No. 673 at PageID #: 46712](#).

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subject depends on the nature and extent of that experience.” *United States v. Cunningham*, 679 F.3d 355, 379 (6th Cir. 2012) (citations omitted). “Where the reliability of the evidence is in dispute, it is more appropriate for a judge to admit the evidence than to keep it from the fact-finder because ‘[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.’” *Great N. Ins. v. BMW of N. Am. LLC*, 84 F. Supp. 3d 630, 637 (S.D. Ohio 2015) (quoting *Daubert*, 509 U.S. at 596).

As GATX suggests, Rule 702’s qualifications requirement allow an expert to bring their extensive knowledge on a field to bear on a range of scenarios, “[p]rovided, of course, that [the expert] applies those principles reliably to the facts of the case at hand.” *Lackey v. Robert Bosch Tool Corp.*, No. CV 16-29-ART, 2017 WL 129891, at \*5 (E.D. Ky. Jan. 12, 2017).<sup>2</sup>

As a human factor expert specializing in risk management, design, policies, procedures, hardware, software, work environments, and team resource management, the Court finds that taken together, Mr. Coelho’s education, academic training, professional experience, and knowledge make him versed in the area of human factors and psychology to create an adequate foundation for his opinion/testimony in decision-making and biases.

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<sup>2</sup> In *Lackey*, Bosch Tools moved to exclude the human factors expert testimony, arguing that she was unqualified because her expertise was limited to military hardware and software, not general power tools. *Id.* The district court disagreed, finding that the human factors expert, who possessed extensive experience in designing product safety warnings, was qualified to provide opinion testimony on product safety warnings. *Id.* GATX also cites *Floyd v. Pride Mobility Products Corp.*, 2007 WL 4404049, at \*2-5 (S.D. Ohio Dec. 12, 2007), in which the district court found that the expert could opine on alternative scooter designs, despite having no involvement in the scooter industry or design, because he relied on sufficient data and experience related to the accident.

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Considering Dr. Coelho's unchallenged experience and knowledge, the Court finds that he is qualified to opine on how human factor's influenced emergency responders' ability to rely on the substance and quality of the information provided to them. The portion of his opinion, however, that “[e]mergency responders could have, and should have, complied with instructions to engage in water cooling[,]”, is excluded. The decision to engage in water cooling requires an expertise in railroad emergency response that Dr. Coehlo lacks. See *Yonts v. Easton Tech. Prods., Inc.*, 676 F. App'x 413, 418 (6th Cir. 2017) (upholding the exclusion of human factor expert testimony on a carbon arrow product's safety, because the expert was not qualified to offer an opinion on the feasibility of design alternatives).

## **2. Dr. Coelho's Third Opinion—that on the Vent and Burn**

Dr. Coelho's third opinion asserts,

Information gathering and decision-making processes exhibited by Norfolk Southern and its contractors, Specialized Professional Services Inc. (“SPSI”) and Specialized Response Services (“SRS”), before executing the subject vent and burn were flawed at least insofar as (a) alternative mechanisms and mitigation responses were not adequately considered and (b) information gathering and decision-making processes were consistent with individuals experiencing problematic influences of biases.

[ECF No. 621-6 at PageID #: 51613.](#)

Norfolk Southern argues that Dr. Coelho lacks the qualifications to offer an opinion on the decision to vent and burn, because he lacks practical experience or education necessary to offer these opinions. [ECF No. 621-1 at PageID #: 32096-97](#). To support the proposition that he is unqualified, Norfolk Southern explains that Dr. Coehlo is inexperienced in assessing the decision to vent and burn, because he has “never performed a vent and burn, seen a vent and burn, or been involved in a decision about whether to vent and burn in connection with a rail emergency.” [ECF No. 621-1 at PageID #: 32097.](#)

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GATX responds that Dr. Coelho is qualified to offer his opinion on the vent-and-burn, because Norfolk Southern's contractors and SPSI assumed that polymerization was occurring, and that the personnel displayed anchoring, overconfidence, authority, and confirmation biases that affected their decision-making leading up to the vent-and-burn. [ECF No. 673 at PageID #: 46712-13.](#)

Norfolk Southern concedes that Dr. Coelho's opinion addresses anchoring, overconfidence, authority, and confirmation biases that could influence personnel decision-making, however, it replies that the substance of his opinion requires knowledge beyond his expertise. Particularly, his opinion that "alternative mechanisms and mitigation responses were not adequately considered,' requires an evaluation of (1) what options other than a vent and burn were theoretically available to emergency responders; and (2) what would amount to adequate consideration of these options." [ECF No. 700 at PageID #: 51271](#). Norfolk Southern suggests that answering those questions requires "substantive understanding of what factors emergency responders consider when confronted with an emergency and the various options that are available to address railroad emergencies." [ECF No. 700 at PageID #: 51271](#). Furthermore, the opinion on the sufficiency of evidence related to polymerization requires "an assessment of evidence related to temperature and pressure", an understanding of factors influencing "temperature and pressure", and an assessment of the information provided to emergency responders related to polymerization. [ECF No. 700 at PageID #: 51271](#).

The Court agrees. Dr. Coelho's background does not allow him to offer opinions evaluating the sufficiency of the temperature and pressure readings for the possibility of polymerization, and the vague assertion about the lack of evidence for alternative explanation for any pressure relief devices activity. *See Fed. R. Evid. 702*, Advisory Committee's notes to the

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2023 Amendments. For example, Dr. Coelho strays beyond his expertise when comparing Mr. McCarthy's temperature reading to the temperature changes expected from OxyVinyls' safety data sheet. *See ECF No. 621-6 at PageID #: 51658* ("[T]he temperature readings remained relatively stable and/or were decreasing, which Mr. McCarty knew from years of training would 'rule out' polymerization, is inconsistent with temperature changes expected from the 'exothermic' reactions described in source documents such as the Oxy SDS."). Dr. Coelho lacks the expertise to evaluate the sufficiency of a temperature readings, and to compare them to OxyVinyls' safety data sheet. Dr. Coelho also asserts:

[G]iven that no pressure readings were taken from (55) OCPX 80370, pressure metrics would not serve as a metric to either support or contradict their hypothesis. Moreover, there is no evidence that SPSI or SRS substantively considered alternative explanations for any PRD activity exhibited by (55) OCPX 80370, such as that stated in Pamphlet 171, including that PRD activity can continue after fires have subsided. Lack of documentation as to PRD activity and timing worsens challenges of objectively using such data to confirm or refute the polymerization hypothesis.

ECF No. 621-6 at PageID #: 51658. The problem is that Mr. Coelho comments on the sufficiency of data required for polymerization, or even goes further to say what pressure relief device activity that the personnel could have considered, with no qualifications or background knowledge on railroad emergency responses, despite being qualified to explain how cognitive biases affect personnel's decision-making.

The Court finds that Dr. Coelho opines on matters beyond his expertise, therefore, the Court excludes part(a) of Dr. Coelho's third opinion asserting, "(a) alternative mechanisms and mitigation responses were not adequately considered[.]"

### **3. Dr. Coelho's Fourth Opinion—that on Norfolk Southern's Wayside Help Desk**

Dr. Coelho's fourth opinion asserts,

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The Norfolk Southern protocol used by a given wayside analyst to respond to alerts and alarms, including, but not limited to, (a) vigilance task demands, (b) lack of operator confirmation requirement, and (c) timing of alert/alarm presentation, increased the likelihood of its single wayside analyst failing to identify the subject wayside hot bearing detector alert and subsequently eliminating the opportunity to communicate the alert to the train crew before the subject derailment.

[ECF No. 621-6 at PageID #: 51613.](#)

Norfolk Southern argues that Dr. Coelho’s lack of railroad operations, wayside detection, or railcar inspection, and his lack of academic experience on Wayside Detectors precludes his fourth opinion about Norfolk Southern’s Wayside Help Desk. [ECF No. 621-1 at PageID #: 32097-98.](#)

In opposition, GATX argues that case law does not require Dr. Coelho to have particularized knowledge to offer his opinion on the emergency response, and that his opinion does not extend beyond his testimony. GATX also responds that the admittance of his testimony requires Dr. Coelho to have “specialized knowledge in decision making within the field of human factors, supported by his extensive training and education.” [ECF No. 673 at PageID #: 46711-12.](#) Finally, GATX argues that Dr. Coelho does not opine on issues beyond his expertise, because he uses his human factor expertise to explain the increased likelihood of human error due to Norfolk Southern’s protocol and procedures for wayside detector analysts. [ECF No. 673 at PageID #: 46715.](#)

Norfolk Southern retorts that Dr. Coelho’s Wayside Help Desk Opinion identifies some human factors, but the substance of the opinion addresses railroad operations, which requires an expertise on derailment causation and Wayside Help Desk operations. [ECF No. 700 at PageID #: 51273.](#) Norfolk Southern cites a portion of Dr. Coelho’s report suggesting that had Norfolk

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Southern implemented operational changes, train members would have been notified of the hot wheel bearing detection and stopped the train:

[t]he Salem hot bearing detector alert would have been more likely to have been detected and used. In turn this ... would have resulted in an increased likelihood that the information would have been communicated to the train crew. It is noteworthy in this regard that the train crew testified that they would have stopped the train had they been provided with the hot detector information.

[ECF No. 700 at PageID #: 51273](#). The issue that Norfolk Southern identifies is that this statement contains an assumption that Norfolk Southern's Wayside Help Desk procedures caused the derailment, and if it had different policies and procedures, "there may have been an opportunity to avert the derailment." [ECF No. 700 at PageID #: 51273](#).

Dr. Coelho's Wayside Help Desk opinion relies on his human factor expertise—he opines that human error of wayside detector analysts and the lack of documentation influenced personnel decision-making.<sup>3</sup> In this instance, it is immaterial that he lacks expertise on derailment causation, and Wayside Help Desk Operations. Because Dr. Coelho's opinion stays within the scope of human factor expertise, he "need not have complete knowledge about the field in question, and need not be certain. He need only be able to aid the jury in resolving a relevant issue." [\*Mannino v. Int'l Mfg. Co.\*, 650 F.2d 846, 850 \(6th Cir.1981\)](#). As indicated above, Dr. Coelho alleges that Norfolk Southern's Wayside Help Desk protocols and procedures were limited by human factors, and had those human factors been considered, "the Salem hot

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<sup>3</sup> Norfolk Southern omits the portion of Dr. Coelho's opinion applying his human factors expertise, "[h]ad Norfolk Southern implemented a protocol for their wayside detector analysts that included [a] provision of a supplement auditory or tactile cue . . . the Salem hot bearing detector alert would have been more likely to have been detected and used." [ECF No. 621-6 at PageID #: 51667](#).

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bearing detector alert would have been more likely to have been detected and used.” [ECF No. 621-6 at PageID #: 51667.](#)

Because Dr. Coelho’s fourth opinion relies on his application of human factor expertise, the Court rejects Norfolk Southern’s request to exclude Dr. Coelho’s fourth opinion.

#### **4. Dr. Coelho’s Fifth Opinion—that about Inspection Practices of the Terminal Railroad Association of St. Louis**

Dr. Coelho’s fifth opinion asserts,

It was both imprudent and inconsistent with good practices that Norfolk Southern failed to ensure that the Terminal Railroad Association of St. Louis (“TRRA”) (a) utilized a written job aid for the safety-critical predeparture inspection of the subject freight train and (b) appropriately documented the inspection. In the absence of such documentation, scenarios in which the TRRA inspection did not occur, or in which certain aspects of the inspection did not occur, cannot be ruled out.

[ECF No. 621-6 at PageID #: 51614.](#)

Norfolk Southern asserts that Dr. Coehlo is unqualified to offer his fifth opinion about the inspection practices of the TRRA, because he has never performed a train inspection, nor published anything with a focus on train inspections. [ECF No. 621-1 at PageID #: 32097-98.](#)

Countering that Dr. Coelho does not exceed his expertise in critiquing the TRRA’s procedures, GATX responds that he identifies the “potential human error stemming from a lack of inspection documentation on Train 32N, which could have provided personnel with information prompting them to perform necessary corrective or preventive actions before Train 32N departed the TRRA yard on February 1.” [ECF No. 673 at PageID #: 46715.](#)

In his report, Dr. Coelho explains how TRRA’s lack of a system or checklist for the documentation of inspected railcars “can be expected to increase the likelihood for omissions during inspections.” [ECF No. 621-6 at PageID #: 51668.](#) He concludes that the lack of

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documentation identifying which railcars had been inspected, who conducted the inspection, and the results of the inspection could create the inference that the predeparture inspection did not occur. [ECF No. 621-6 at PageID #: 51668](#). While Norfolk Southern correctly identifies that the rail transport industry has specific documentation practices, Dr. Coelho may use his human factor expertise to explain how the current practices influenced decision-making. See [\*Morales v. Am. Honda Motor Co.\*, 151 F.3d 500, 516 \(6th Cir. 1998\)](#) (“The fact that a proffered expert may be unfamiliar with pertinent statutory definitions or standards is not grounds for disqualification. Such lack of familiarity affects the witness' credibility, not his qualifications to testify.”)

The Court rejects Norfolk Southern’s request to exclude Dr. Coelho’s fifth opinion.

## **II. Dr. Coelho’s Opinions in Rebuttal to Dr. Coates, Mr. Wolf, and Mr. McClellan.**

As his rebuttal opinion, Dr. Coelho asserts,

[o]pinions offered by witnesses retained on behalf of Norfolk Southern in this matter, Dr. Coates, Mr. Wolf, and Mr. McClellan, are flawed at least insofar as (a) they ignore indications that decision makers in the subject incident response were problematically influenced by decision-making biases and (b) they suffer from conjecture.

[ECF No. 621-6 at PageID #: 51613.](#)

Norfolk Southern asserts that Dr. Coelho lacks the qualifications to rebut Dr. Coates, Mr. Wolf, and Mr. McClellan, because the substance of his opinions goes beyond his human factor expertise. [ECF No. 621-1 at PageID #: 32098.](#)

GATX responds that Dr. Coelho’s critiques of Dr. Coates and Mr. Wolf “reveal significant gaps in their analyses, exposing flawed assumptions, selective focus, and a failure to account for key procedural and human factors”, while his critique of Mr. McClellan addresses the gap that Mr. McClellan identifies in his report. [ECF No. 673 at PageID #: 4673-14, 46716.](#)

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### **1. Dr. Coelho's Rebuttal Against Dr. Coates' Critique of OxyVinyls's SDS.**

Norfolk Southern urges Dr. Coelho's lack of experience and education in chemistry prevents him from rebutting Dr. Coates, a tenured chemistry professor at Cornell who has taught undergraduate organic chemistry and graduate polymer chemistry for 26 years, with a Ph.D. in Organic Chemistry from Stanford, who has reviewed about 100 safety data sheets, who opines on OxyVinyls' hazardous warnings on the safety data sheet. [ECF No. 621-1 at PageID #: 32099](#).

Conceding that Dr. Coelho is not an expert in chemistry, GATX counters that Dr. Coelho has the qualifications to rebut Dr. Coates because Dr. Coelho does not opine on the accuracy of the safety data sheet. [ECF No. 673 at PageID #: 46713-14](#). “[I]nstead, he opines that Norfolk Southern did not follow a decision-making process that would have reduced biases and minimized the risk that inaccurate information was able to permeate the decision-making process.” [ECF No. 673 at PageID #: 46714](#).

As Norfolk Southern points out, GATX's characterization of the Dr. Coelho's rebuttal of Dr. Coates omits the portions that goes beyond his human factor's expertise. [ECF No. 700 at PageID #: 51275](#). For example, Norfolk Southern cites Dr. Coelho's opinion that if emergency responders had engaged in Dr. Coelho's suggested “decision-making and documentation processes, ‘they would have been presented with sufficient evidence, consistent with their prior knowledge, to determine that polymerization was not occurring.’” [ECF No. 700 at PageID #: 51275](#) (citing [ECF No. 621-6 at PageID #: 51652-53](#)). Norfolk Southern also cites Dr. Coelho's assertion that Dr. Coates,

fails to address documents other than the OxyVinyls [vinyl chloride monomer] [safety data sheet] relied upon by decision makers at the incident ... (e.g., Pamphlet 171, the [U.S. DOT Emergency Response Guide], and the [Norfolk Southern Job Safety Analysis]), which provide additional information regarding polymerization,

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including that [pressure relief device] activation in a [vinyl chloride monomer] tank car after fires had subsided is expected.

[ECF No. 700 at PageID #: 700](#) (citing [ECF No. 621-6 at PageID #: 51652](#)). Norfolk Southern contends that both opinions require more than human factors expertise, because it requires analyzing the quality and reliability of information in different sources, the purpose that those documents were provided, and then decide of which is most relevant and applicable to the derailment. [ECF No. 700 at PageID #: 51276](#).

While Dr. Coelho explains how documentation practices can influence personnel's decision-making, he cannot explain how the context of those sources would have provided the personnel with more information concerning the polymerization. For example, Dr. Coelho explains that Dr. Coates' "analysis is specific to polymerization and fails to acknowledge additional instructions provided in source documents, such as to cool down the tank containers with water to reduce temperature and pressure, and to continually reassess the situation and modify response accordingly." [ECF No. 621-6 at PageID #: 51652](#). The context of the source documents that Dr. Coates relies on is inextricably intertwined with matters of railroad emergency response—an expertise that Dr. Coelho lacks.

Accordingly, the Court excludes Dr. Coelho's rebuttal of Dr. Coates.

## **2. Dr. Coelho's Rebuttal Opinion of Mr. Wolf**

Norfolk Southern argues that Dr. Coelho cannot rebut Mr. Wolf's opinion asserting that "the sole cause of the derailment of Train 32N at East Palestine was an unexpected failure of the L1 journal bearing on the GPLX hopper car", because Dr. Coehlo's rebuttal opinion is not limited to human factors issues. [ECF No. 621-1 at PageID #: 32100](#). Norfolk Southern zeroes in on Dr. Coiehlo's lack of experience with railroads, derailment investigations; his lack of education in the rail transport industry; and, his lack of employment in a company in the rail

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transport industry. [ECF No. 621-1 at PageID #: 32100-01](#). Those deficiencies, Norfolk Southern argues, supports a finding that Dr. Coelho is unqualified to rebut Dr. Wolf, an expert with “over 53 years of experience in the rail industry, including 17 years at Class I railroads, and has over 49 years of experience specializing in the investigation of train derailments and accidents.” [ECF No. 621-1 at PageID #: 32101](#). Furthermore, Norfolk Southern claims that Dr. Coelho cannot assert that Mr. Wolf disregarded the Norfolk Southern’s Wayside Help Desk Operations and TRRA inspection procedures, because he is unqualified to opine on those topic. [ECF No. 621-1 at PageID #: 32099](#).

GATX argues that Dr. Coelho’s rebuttal opinion critiques Mr. Wolf’s assertion that the sole cause of the derailment was the L1 journal bearing on the GPLX hopper car, because it “implies that Wolf ruled out all other potential contributing factors, including human error—a topic on which Coelho (not Wolf) is qualified to opine.” [ECF No. 673 at PageID #: 46715](#). Reaffirming the proposition that human factors may offer their decision-making biases and human error across various fields, even without specific industry experience, GATX also contends that Coelho can identify human factors contributing to the derailment, even Norfolk Southern’s protocol for wayside detector analysts. [ECF No. 673 at PageID #: 46715](#) (citing [Lackey, 2017 WL 129891, at \\*5](#)).

Contesting GATX’s response that Dr. Coelho only offers a human factors critique of Mr. Wolf, Norfolk Southern argues that an assertion of a possibility that human error contributed to derailment is a “substantive critique of Mr. Wolf’s causation analysis, which requires an understanding of what factors can contribute to a train derailment and what factors did and did not contribute to this derailment.” [ECF No. 700 at PageID #: 51276](#). Additionally, Norfolk Southern replies that, despite Dr. Coelho’s asserting that Dr. Wolf glossed over its Wayside Help

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Desk Operations and TRRA's documentation and inspection procedures, "there is no basis to conclude that different documentation requirements would have had any effect on the derailment." [ECF No. 700 at PageID #: 51274 n.2.](#)

Dr. Coelho may contend that human factors could have contributed to the train derailment, in rebuttal to Mr. Wolf's opinion asserting that the sole cause of derailment was the L1 journal bearing on the GPLX hopper. The Court also rejects Norfolk Southern's argument that it should exclude Dr. Coelho's assertion that his report fails to acknowledge the wayside detector protocols, because, as earlier indicated, "[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." [Great N. Ins. 84 F. Supp. at 637.](#)

### **3. Dr. Coelho's Rebuttal of Mr. McClellan**

Norfolk Southern claims that the Court should not permit Dr. Coelho's rebuttal opinion against Mr. McClellan because his criticism does not involve human factors, and it is an issue that is within the competency of the jury. [ECF No. 621-1 at PageID #: 32102.](#) Dr. Coelho asserts that Mr. McClellan's opinion relating to the performance of the pressure relief devices suffers from conjecture and ignores decision-making biases, because the volume of vinyl chloride monomer in two of the derailed railcars that could not accurately be assessed. [ECF No. 700 at PageID #: 32102.](#) Dr. Coelho opines that Norfolk Southern and its contractors are the cause of the uncertainty about the volume of that flammable gas because the lack of documentation concerning the pressure relief devices had negative effects on decision-making. [ECF No. 621-1 at PageID #: 32102.](#) Norfolk Southern argues that Dr. Coelho's assertion that the alleged fault of the uncertainty results from itself and its contractors is something that a fact

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witness might establish, and “is “equally within the competence of the jurors to understand and decide.”” [ECF No. 621-6 at PageID #: 32102](#) (quoting *Youngberg v. McKeough*, 534 F. App’x 471, 479 (6th Cir. 2013)).

Responding that Dr. Coelho is qualified to explain that the human error of poor record keeping contributed to the vent and burn decision, GATX answers that the lack of documentation explains Mr. McClellan’s assertion that he could not accurately assess the volume of vinyl chloride monomer in the pressure relief devices. [ECF No. 673 at PageID #: 46716-17](#). Particularly, it explains that Dr. Coelho “emphasizes that this documentation gap increased susceptibility to “problematic and biased decision-making due to reliance on subjective assessments and/or memory recall”—human errors consistent with the decision to proceed with vent-and-burn, a topic that again fits neatly within Coelho’s human factors expertise.” [ECF No. 673 at PageID #: 46717](#). It also responds that Coelho’s rebuttal opinion is not only meant for the jury, because his human factor expertise assists the jury outside of their competence. [ECF No. 673 at PageID #: 46718](#).

Norfolk Southern concedes that Dr. Coelho’s opinion that the lack of documentation of PRD activity led to uncertainty about volume of vinyl chloride monomer, and that the lack of documentation can diminish decision-making are not proper subjects for the jury. But it argues that Dr. Coelho’s opinions do not concern human factor analysis, but rather, involve a jury-based fact that will or will not be established by fact witness testimony at trial. [ECF No. 700 at PageID #: 51280](#). The Court agrees.

Dr. Coelho may opine on how poor documentation practices affected personnel’s decision-making. Dr. Coelho may not, however, opine that Norfolk Southern and its contractors caused the uncertainty that prevented Mr. McClellan from accurately assessing the volume of

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v vinyl chloride monomer in the pressure relief devices. That is a question of fact for the jury. The jury can make inferences about the presence or absence of negligence from the evidence. *Woods v. Lecureux*, 110 F.3d 1215, 1220 (6th Cir.1997) (“testimony that does little more than tell the jury what result to reach . . . is properly excludable under the Rules.”); *see also Jetcraft Corp. v. Flight Safety Int'l*, 16 F.3d 362, 367 (10th Cir. 1993) (excluding human factor expert because the expert performed something that the jury could do: “infer the presence or absence of negligence from the circumstantial evidence adduced at trial.”)

### **III. The Reliability of Dr. Coelho’s Opinions**

Norfolk Southern also argues that Dr. Coelho’s opinions lack reliability, because he is an expert for hire considering that he has been deposed as a proposed expert in 21<sup>4</sup> separate matters since 2018, has never testified at trial, and has occupied more than half his time working in connection with lawsuits, and his opinions are vague, among other complaints. [ECF No. 621-1 at PageID #: 32103-105](#).

GATX counters that Dr. Coelho is a reliable expert witness, and even if he were an expert for hire as Norfolk Southern suggests, that alone is not a sufficient basis to exclude his testimony, because Dr. Coelho has particularized experience and knowledge as a human factor scientist. [ECF No. 673 at PageID #: 46718-721](#).

The Sixth Circuit “views with special caution expert testimony prepared solely for purposes of litigation, rather than flowing from an expert's line of scientific or technical work.” *In re Aredia & Zometa Prods. Liab. Litig.*, 483 F. App'x 182, 190 (6th Cir. 2012) (citing *Johnson*

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<sup>4</sup> Norfolk Southern’s citation of the Testimony History of Chason J. Coelho, Ph.D., CPS refers to 20 matters—not 21. *See ECF No. 621-6 at PageID #: 51677-78 (Appendix B)*.

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*v. Manitowoc Boom Trucks, Inc., 484 F.3d 426, 434–35 (6th Cir. 2007)*). For this reason, courts evaluate whether the opinion was “conceived after the start of this litigation” or if it was not a product of their independent work[.]” *Wilden v. Laury Transp., LLC, 901 F.3d 644, 655 (6th Cir. 2018)* (quoting *Johnson, 484 F.3d at 434*). An opinion given “by a ‘quintessential expert for hire’ does not require that the expert ‘be accorded a presumption of *unreliability*'; rather, the trial court must evaluate whether there is some objective basis for the opinion.” *Johnson, 484 F.3d at 434*.

As indicated herein, the Court finds that Dr. Coelho’s opinions, to the extent admissible, appear rooted in objective, verifiable evidence, because he relies on a variety of “academic literature, government agency reports, and depositions taken in this matter.” [ECF No. 673 at PageID #: 46721](#). Therefore, the Court rejects Norfolk Southern’s request to exclude Dr. Coelho’s opinions entirely because he is a quintessential expert for hire.

#### IV. CONCLUSION

The Court grants in part, and denies in part, Norfolk Southern’s Motion to Exclude the Expert Report and Testimony of Dr. Chason Coelho. ([ECF No. 621](#)).

Accordingly, the Court:

- Excludes part(a) of Mr. Coelho’s (second) opinion that “[e]mergency responders could have, and should have, complied with instructions to engage in watercooling[]”;
- Excludes Dr. Coelho’s (third) opinion concluding that emergency responders did not adequately consider “alternate mechanisms and mitigation responses” before executing the vent and burn;
- Excludes Dr. Coelho’s opinion in rebuttal to Dr. Coates in its entirety;
- Excludes Dr. Coelho’s opinion in rebuttal of Mr. McClellan that the uncertainty in Mr. McClellan’s report “is related to a lack of documentation of PRD activity by Norfolk Southern and its contractors[,]”;

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- And, DENIES the motion to exclude in all other aspects.

IT IS SO ORDERED.

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January 22, 2025

Date

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*/s/ Benita Y. Pearson*

Benita Y. Pearson

United States District Judge